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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,195	04/18/2002	William L. Kopko	2709-104	8600

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EXAMINER

FREAY, CHARLES GRANT

ART UNIT	PAPER NUMBER
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3746

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/009,195

Applicant(s)

KOPKO, WILLIAM L.

Examiner

Charles G. Freay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 77-98 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 77-98 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is in response to the amendments and remarks submitted July 7, 2005. In making the below rejections and or objections the examiner has considered and addressed each of the applicant's arguments.

Claim Objections

Claims 84 and 93 are objected to because of the following informalities: the claims should end with a period. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 77, 79, 86 and 88 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Munk (USPN 4,667,465) as set forth in the previous office action.

Claims 77, 79, 86 and 88 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by the Foster-Pegg Article (Supercharging of Gas Turbines by Forced Draft Fans With Evaporative Intercooling) as set forth in the previous office action.

Claims 77-80 and 86-89 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Bronicki et al (UK 2 280 224) as set forth in the previous office action.

Claim 95 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kolp et al (Advantages of Air Conditioning and Supercharging an LM6000 Gas Turbine Inlet).

Kolp et al disclose throughout their article but in Fig. 12 in particular, a supercharged power-producing gas turbine system including a gas turbine driving a generator and having a supercharger which by definition does and is capable of increasing and varying the pressure of the inlet air.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 77-81 and 86-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolp et al in view of EPRI (The article "EPRI Technology to enhance Combustion Turbine Output").

As noted above Kolp et al discloses a supercharged gas turbine system. The system is additionally cooled by evaporative coolers located upstream and downstream of the supercharger. The coolers and the supercharger are used to boost power and condition the air in varying ambient conditions (particularly high ambient temperatures). Kolp et al do not disclose the use of a fogger as the cooling device. EPRI also discloses

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the use of a cooler to condition the inlet air temperature as a result of rising ambient temperatures. EPRI teaches that the "EPRI Spray Cooler offers improved performance over conventional media-type evaporative coolers". Thus at the time of the invention it would have been obvious to one of ordinary skill in the art to substitute a fogger/spray cooler such as disclosed by EPRI for the evaporative coolers of Kolp et al in order to obtain improved performance relative to an evaporative cooler.

With regards to claims 81 and 90 the examiner notes that each of the references clearly teach controlling the cooling in response to rising ambient temperatures. It would have been obvious to one of ordinary skill in the art that the amount of water which has been controllably injected as the ambient temperature rose would have to be similarly controlled as the ambient temperature began to fall back towards the temperature at which the device was designed to be used.

Claims 82-85 and 91-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolp et al in view of EPRI as applied to claims 77-81 and 86-90 above, and further in view of Craig (USPN 3,500,636).

As set forth above Kolp et al in view of EPRI disclose the invention substantially as claimed but do not disclose that the supercharger is an axial fan with variable pitch or speed or that there are inlet vanes to control supercharging. Craig discloses a gas turbine system (2, 3, 4) having an axial compressor/fan (1) having variable pitch blades (col. 5 lines 25-30) or variable in speed (col. 5 lines 38-41). Further, Craig notes that it would be obvious to provide intercooling (col. 5 lines 36-38). At the time of the invention

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it would have been obvious to one of ordinary skill in the art to utilize variable supercharging in order to allow for use of the system in a wider array of ambient conditions while maintaining output. With regards to claims 83 and 94 the examiner gives official notice that using inlet guide vanes to control compression is well known and that it would have been obvious to one of ordinary skill in the art at the time of the invention to use such an arrangement as a simple well known compressor controller.

Claims 96-98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolp et al as applied to claim 95 above, and further in view of Craig (USPN 3,500,636).

As set forth above Kolp et al disclose the invention substantially as claimed but do not disclose that the supercharger is an axial fan with variable pitch or speed or that there are inlet vanes to control supercharging. Craig discloses a gas turbine system (2, 3, 4) having an axial compressor/fan (1) having variable pitch blades (col. 5 lines 25-30) or variable in speed (col. 5 lines 38-41). Further, Craig notes that it would be obvious to provide intercooling (col. 5 lines 36-38). At the time of the invention it would have been obvious to one of ordinary skill in the art to utilize variable supercharging in order to allow for use of the system in a wider array of ambient conditions while maintaining output. With regards to claims 83 and 94 the examiner gives official notice that using inlet guide vanes to control compression is well known and that it would have been obvious to one of ordinary skill in the art at the time of the invention to use such an arrangement as a simple well known compressor controller.

Response to Arguments

Applicant's arguments filed July 7, 2005 have been fully considered but they are not persuasive. The applicant has repeated many of his arguments with respect to the Munk, Foster-Pegg and Bronicki et al references. The examiner repeats below and maintains his arguments with respect to the applicant remarks regarding these references. The examiner notes that throughout the remarks section the applicant argues that The Munk reference is used for NOx reduction and not power enhancement, and that the elements which the examiner has noted are don't operate in the same manner as the elements which are set forth by the applicant. The examiner notes that much of the material set forth in the claims is intended use. It set forth in statements such as "which increases the pressure...". Such statements are intended use statements. The examiner maintains his position that the elements operate as claimed. Further it is noted the elements are capable of performing the functions as set forth in the claims and therefore anticipate the claim language. The applicant additionally argues that the Munk Foster-Pegg and Bronicki references do not disclose fogging. The examiner once more disagrees with this position. The examiner maintains his position that the fine spray devices of the noted references are foggers and notes the last line of the Munk reference where they are referred to as such.

Additionally the examiner notes that the newly applied Kolp et al, and EPRI references clearly disclose and make obvious the claimed invention and do so using similar devices as those disclosed in the Munk, Foster-Pegg and Bronicki references.

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The breadth of the references here noted which are using elements to pressurize and cool inlet air with a fog clearly indicate that one of ordinary skill in the art would know understand that the elements disclosed either do operate or are capable of operating in the manner set forth by the applicant in his claims.

With regards to the argument that the examiner has not given enough weight to the applicant's declaration the examiner disagrees. The examiner has considered what Mr. Kopko but does not agree with his interpretation of the reference. Mr. Kopko asserts that the blower in Munk is used only the pressure drops caused by the heater and the fog system. The examiner notes that the heater is not a required element and as taught by Munk may not even be present. Additionally, there is no teaching in Munk that the element (160) of Munk is only to be used in the restrictive pressure ranges caused by any pressure drop which the fogger may cause.

The applicant argues against the Munk reference because Munk does not disclose a supercharging system which increases the pressure of the gas in the input airstream. The applicant argues that the blower of Munk merely provides a forced draft of air. The applicant also notes a declaration filed under 37 CFR 1.132 by the applicant on May 7, 2003. In that declaration the applicant argued that Munk's blower is not a supercharger because it does not increase the pressure of the input airstream. The applicant argues that the purpose of the blower is to overcome pressure drops from the heater and the fogging system.

Repeated below are the examiner's arguments presented in the past office action.

The examiner disagrees with the applicant's analysis of the Munk reference. Munk states that the blower produces a "*forced draft* of air". Forcing air clearly requires an increase in pressure and thus the blower clearly is providing supercharging to the air being provided to the compressor.

The Declaration under 37 CFR 1.132 filed May 7, 2003 is insufficient to overcome the rejection of claims based upon Munk under 35 USC 102(b) as set forth in the last Office action because: The declaration merely provides the opinion of the inventor (who clearly the has an interest in this application). It is Mr. Kopko's opinion that the blower is merely used to overcome the heater effects and the cooler. However, it is noted that the heaters in Munk are optional elements (note col. 4 line 7). Further even if the purpose of the blower is to overcome the cooler and the optional heater the blower is still "supercharging" the input airflow relative to what would be achieved if the compressor directly sucked the air from ambient through the cooler and any optional heating equipment without the blower present. The declaration provides no factual evidence or data relating to the operational states (pressure, temperature, etc.) of the Munk device.

The applicant argues against the Foster-Pegg reference because Foster-Pegg does not describe a supercharging system and at least one fogger located upstream of the gas turbine input air stream, "wherein the gas turbine is operated to provide

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maximum generator design rated output at summer-peaking temperatures". The applicant argues that "Foster-Pegg fails to teach such operation". The applicant admits that the cooler of Foster-Pegg would increase the power output and states that Foster-Pegg would not "change the shape of the curve as shown in Fig. 6 for example". The applicant seems to be arguing that the supercharger of Foster-Pegg will not produce the same results as the applicant's supercharger.

The examiner disagrees with the applicant's arguments. The supercharger and cooling structure set forth in Foster-Pegg are arranged in the same manner as set forth in the applicant's invention. On page 2 the last paragraph of the first column Foster-Pegg notes that when the pressure ratio across the gas turbine is raised (i.e. the intake pressure raised) there is a power increase. Foster-Pegg goes on to say that "(t)o take advantage of this effect, the intake pressure of a gas turbine may be increased by use of a forced draft fan" (The examiner notes the use of language similar to that describing the blower of Munk used here in Foster-Pegg to describe the supercharging effect of the fans). With regards to the arguments relating to the shape of the operational curves achieved by the applicants structure it is noted that the features upon which applicant relies (i.e., the shape of the curves) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The applicant argues against the Bronicki et al reference because "Bronicki explains that the heat exchanger 222 produces cooled ambient air, the precompressor device 223 compresses the cooled ambient air to produce pressurized air that is warmer than the ambient air, and the evaporative cooler cools that pressurized air to produce cooled ambient air at ambient temperature and relative humidity." The applicant then notes that claim 77 sets forth that the fogger humidifies and cools the input air stream and from this concludes that Bronicki does not humidify and cool the input air stream.

The examiner disagrees. In the applicants own arguments he notes that the Bronicki et al coolers humidify and cool the air stream twice as the air travels to the compressor. The applicant seems to be arguing that the air is not cooled relative to ambient. The claim does not include this limitation however and, as noted by the applicant in the above arguments, Bronicki et al teaches both a supercharger and cooling elements in the input air stream.

The applicant also argues that by the examiner stating that the functional and operational claim limitations have not structurally defined over the prior art the examiner has simply ignored these limitations. The applicant argues that the examiner cannot simply ignore the functional language because it does not merely state the inherent result of other claim limitations.

Respectfully, a careful reading of the examiner's remarks at page 5 of the last office action makes it clear that the functional statements and the statements of

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intended use were not ignored by the examiner. Once again, as previously noted by the examiner, a recitation directed to the manner in which a claimed apparatus is intended to be used does not distinguish the claimed apparatus from the prior art - *if the prior art has the capability to so perform*. See ex parte Mashum, 2 USPQ2d 1647 (1987). Since the prior art references each disclose a supercharger for increasing the pressure of the airstream of the gas turbine and a fogging cooler which humidifies and cools the air stream going to the cooler then each of the references clearly disclose structure used in the manner and for the same purposes intended by the applicant. Clearly the superchargers and foggers of the prior art devices have the capability to perform as set forth in the applicants intended use and functional statements. Therefore, these limitations have not structurally defined the claims over the prior art.

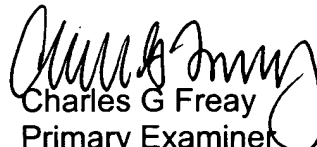
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles G. Freay whose telephone number is 571-272-4827. The examiner can normally be reached on Monday through Friday 8:30 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe can be reached on 571-272-4444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Charles G Freay
Primary Examiner
Art Unit 3746

CGF
August 26, 2005